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Botanical Notes.

Is there a second species of Conradina? Mr. Gerald McCarthy recently found on the banks of the Congaree River, near Columbia, S. C., a "shrubby bush" which closely resembles in foliage and appearance *Conradina canescens*. There were found upon the specimens, however, a few calyxes in fruit, which prove that it cannot be that species. The calyx is not at all villous; the lower teeth are broad and barely acute; the upper lip is narrowed to the obscurely three-toothed apex; and the seeds are more than twice as large. A single imperfect corolla detected among the leaves is very much like that of *C. canescens*, but there is only a single pair of short, stout filaments. Whoever may be collecting in that region during the coming season should look for this plant in flower. S. W.

New Botanical Laboratories and Museums at Harvard University.—We have learned with much pleasure that Professor Goodale has succeeded in obtaining the sum desired for the erection of an addition to the Agassiz Museum. It is, perhaps, known to our readers that the Museum of Comparative Zoölogy constitutes the north wing, and the Peabody Museum of Archaeology the south wing of the proposed University Museum. The Botanical Section, now in process of erection, will occupy seventy feet of the Oxford Street front of the quadrangle. In the plans which we have received we note that ample accommodations have been provided for Professor Goodale's and Professor Farrow's laboratories, and for suitable lecture rooms. Parts of the first, third and fourth floors of the building, which is to be six stories high, have been reserved for the Botanical Museum. It is proper to state that these new arrangements do not contemplate any change in the status of the Herbarium. The only essential lack that we notice in the plans is that they provide comparatively little north light, the exposure being chiefly east and west.

A Syllabus of "A Course of Lectures on Forest and Forest Products, by Professor G. L. Goodale, M.D.," delivered before the Lowell Institute, Boston, February and March, 1888, has been issued, including plans for twelve lectures and covering a

wide field in structural organography touching upon economic and horticultural questions. We commend the outline to teachers.

Cypress Knees.—Since sending you my note, (p. 137), Professor Shaler has recorded that young trees appear in water-covered districts where it is evident a tree from seed could not have sprung. The suggestion is made that such trees may have sprung from fallen branches rooting in the water and mud. Those versed in the propagation of evergreens could not admit this. All experience is against the power of this class of conifers to push out roots from mature wood, though many will from half-mature wood, or cuttings from the same season's growth. The fact, however, that young trees do appear in places where a seed could not sprout and successfully grow to a young tree, as recorded by Prof. Shaler, is a valuable contribution to our knowledge. It accords better with the English suggestion that the "Knee" is an abortive sucker, than a rooted branch. The arrested growth may be so accelerated as to become a true tree trunk in some instances, just as the branch arrested to make a larch cone, a pear or a rose, will sometimes be so accelerated as to produce another growth from the axis, as is constantly the case in the pineapple. But the "rooting branch" hypothesis of Prof. Shaler, or the "arrested sucker" of the anonymous English writer, ought to be easily confirmed by those who are in the vicinity of a Cypress swamp. Some evidences of these transition stages should surely exist.

The subject has a broad interest. Should it be proved by actual evidence that the "Knee" of the *Taxodium* is an abortive sucker, we shall all want to know how an abortive sucker becomes hollow, and the answer cannot but have a great value in vegetable physiology, and kindred branches of the science.

THOMAS MEEHAN.

In regard to Cypress Knees mentioned by Mr. Meehan, in the BULLETIN for May, I would remark that this tree will certainly make "knees" on high land. They are, however, not so prominent as in the overflowed swamps, since they do not have to project so far to reach the light and air. They certainly do not always have tap roots below them, for I recollect that in the grounds at "Hampton," near Baltimore, in an out-of-the-way

spot, when the lawn mower could not work, my men were often bothered by their scythe blades striking the "knees" of a large Cypress tree. I had the "knees" chopped off level with the ground, and each cut off just as an upward curl in the root a little thickened and pointed above, and in most cases the root was entirely severed. These were mere little protuberances, however, as compared with the great knees seen above the water in Southern swamps. A longitudinal section of one of these projections, showing the course of the sap and woody layers, I think would prove them to be merely convolutions of the roots peculiar to the genus, perhaps intended as braces for the tree in the soft soil in which its roots run so shallow.

It may be of interest to note that we have found *Sedum Nevii* on top of the Blue Ridge just north of Rockfish Gap, Va. This is two hundred miles northeast of the most northern point given by any authority at my command. The plant was found among other interesting specimens by Professor Seaman and a party of boys from the Miller School. We note the fact that a great many of the wild blackberries are producing rose-colored flowers this spring. Can it be owing to the cool and wet weather?

W. F. MASSEY.

Stellaria pubera.—"Stem pubescent in one lateral or two opposite lines." Not being able to understand from my own view of the morphological significance of the hairy line as developed in *Stellaria media*, the common chickweed, how there could possibly be hair in two opposite lines, I obtained fresh plants for study. I do not find the two opposite lines in any specimens before me.

But an interesting fact worth recording, is that the flowers are proterogynous, and that not only are the lower verticils arrested in their final development until the pistils have become perfect, but the second movement in the accelerated growth downward is so nicely regulated, that the inner cycle or verticil of five stamens shed their pollen before the five stamens in the outer ones. I have often noted this nice distinction in the double cycles of proterandrous hexandrous monocotyledons, but this is the first instance I can recall in proterogynous flowers.

THOMAS MEEHAN,

The formation of Alkaloids in Plants.—Professor W. H. Dunstan has been indicating to the chemists' assistants of London the proper direction and method of pursuing the investigation of the above subject. The experimental studies of the pure chemist have shown the series of re-actions by which we may pass from starch through carbo-hydrate to organic acid, and thence to alkaloid. In the case of malic acid our knowledge is exceptionally extended, the series of intermediate compounds being almost completely established, and its relations to certain alkaloids very clearly pointed out. These steps being thus shown to be probable, it remains for the pharmacist to complete the evidence by actually detecting the indicated intermediate compounds in the plants. Those interested will find in the Pharmaceutical Record for April 15th, an excellent report of the lecture, taken from the British and Colonial Druggist.

H. H. R.

The Botanical Section of the Academy of Natural Sciences of Philadelphia has organized a series of field excursions similar to those of the Club. On July 4th the trip is to May's Landing, N. J., leaving Market Street at 8 A.M., and on July 11th to Cape May, leaving at 7 A.M. Mr. Martindale will direct the party. We wish our neighbors all success and pleasure in these trips to an extremely interesting region. All interested in botany are cordially invited to join.

Reviews of Foreign Literature.

Die Wechselbeziehung zwischen Pflanzen und Ameisen im tropischen Amerika. A. F. W. Schimper. Jena. Gustav Fischer, 1888.

This is the title of an article forming the first part of a collection of botanical notes from the tropics. The author believes to have discovered some interesting facts in reference to certain relations between animals and plants, by which both are benefited. He states that everywhere in tropical America, in woods or gardens, the traveler is surprised by seeing lines of moving leaf fragments, which are found to be carried by a procession of ants. A similar line of ants may be found traveling in the opposite direction to certain trees and shrubs where they cut out pieces of leaves, some as